

ABSTRACT OF THE DISCLOSURE

There is disclosed a manufacturing method of a phase shift mask blank in which dispersions of phase angle and transmittance among blanks can be reduced as much as possible and yield is satisfactory. In the manufacturing method of the phase shift mask blank, a process of using a sputtering method to continuously form a thin film on a transparent substrate comprises: successively subjecting a plurality of substrates to a series of process of supplying the transparent substrate into a sputtering chamber, forming the thin film for forming a pattern in the sputtering chamber, and discharging the transparent substrate with the film formed thereon from the sputtering chamber; supplying and discharging the transparent substrate substantially at a constant interval; and setting a film formation time to be constant among a plurality of blanks.